

DEVICE AND METHOD FOR ADDING WEIGHT TO A HOCKEY STICK BLADE

OVERVIEW

0001 The present invention relates to hockey, in all the forms in which it is practiced, including ice hockey, roller hockey, in-line hockey, field hockey and street hockey. Specifically, the present invention pertains to a device attached to a blade of a hockey stick, which, by adding weight to the hockey stick, permits an individual to improve handling and control of the hockey stick and shooting and passing the puck or ball. In particular, the present device for adding weight to a hockey stick blade is especially useful for training since the heaviness of the device may be varied and the device is secured to the face of the blade, which allows a variety of attachment techniques.

0002 Currently, training with weights added to sports equipment is done during the practice sessions of several sports, most notably baseball and hockey, to improve accuracy and strength in hurtling a projectile. Specifically for hockey, adding weight in practice typically aims to improve stick manipulation while handling and passing a puck or ball as well as shooting accuracy.

0003 Adding weights either to the shaft of the hockey stick or to the blade is already known. However, adding weights to the shaft as defined in U.S. Pat. No. 6,328,666 issued to Manory or in U.S. Pat. No. 4,364,560 issued to Gemmel does not foster with specificity an individual's development of that muscle memory which achieves winning communication between the hockey stick and the puck or ball. Such muscle memory includes: a learned awareness of the body movement and motion by which an individual should swing or handle the stick to produce the desired trajectory of the puck or ball; and the body knowledge of applying the sufficient force to drive the puck or ball to its destination coupled with the recognition of how to flick the wrist when transmitting such force to propel the puck or ball with accuracy.

0004 Adding weights to the hockey stick blade has been accomplished in U.S. Pat. No. 5,520,386

to Sasko or in U.S. Pat. No. 5,484,146 to Loschiavo, in which a singular weight is essentially clipped onto the top perimeter of the blade and let hung therefrom. These weighting devices add weight to the hockey stick blade but do not resolve problems and limitations inherent in their use in the development of effective and winning muscle memory. Specifically, an important limitation in using these previous weighting devices, in particular Sasko's, arises from the fact that these hang over both faces of the blade and can interfere with the communication between the blade and the puck/ball. Use of these devices does not faithfully mimic the conditions of actual play but creates an artificiality in the communication between blade and puck/ball on the front face of the blade. This means that a player has to accommodate for that artificiality during practice. Another problem that these previous devices do not resolve is the need to continually create an adaptive and ever changing learning situation during hockey practice in order to improve different muscle groups and to develop an adaptable muscle memory.

0005 To resolve these limitations, a device is needed that neither attaches by a clip nor hangs down over both sides of the blade but which secures to only one blade face entirely within the surface of the blade face while adding heaviness. Such a device would not interfere with the communication between the blade and the puck/ball on the front face of the blade. The present invention provides a device for adding weight to a hockey stick blade and a method for using it, which resolve the limitations discussed above.

0006 The present invention adds heaviness to the blade of a hockey stick by being positioned as well as secured entirely within the surface area of the blade. In one embodiment, the present device comprises at least one weight and a means for securing the weight to one face of the blade. The at least one weight is of a size and configuration as to fit entirely within the surface area of the blade face. In another embodiment, the at least one weight comprises a metal portion. The at least one weight may also comprise a conformable portion for conforming the weight(s) to the contours of the face of the blade to which the weight(s) is secured. The at least one weight may comprise

a coating adapted to withstand contact with a puck or ball during the playing of hockey. In one embodiment of the present invention, the means for securing the at least one weight comprises adhering tape. In an embodiment in which there are multiple weights, the present device further comprises a joining means for joining the weights to each other.

0007 In an alternative embodiment, the present device comprises at least one weight holder that holds at least one weight. In this embodiment, it is the weight holder that is of a size and configuration as to fit entirely within the surface area of the blade to which it is secured. In one embodiment, the at least one weight holder may comprise a conformable portion for conforming to the contours of the face of the blade to which it is secured. In a further embodiment, the at least one weight held by the weight holder may comprise a metal portion and a conformable portion that envelops the metal portion, the conformable portion allowing the weight(s) to conform to the contours of the face of the blade to which the weight holder is secured. In another embodiment, the weight holder comprises a casing for receiving the at least one weight. The casing may also comprise a conformable portion for conforming to the contour of the face of the blade to which the weight holder is secured. In a further embodiment, the casing is adapted to receive removable weights. In a still further embodiment, the casing is adapted to receive a plurality of weights of varying size and heaviness. In another embodiment, the casing comprises a sheet, film or tape onto which the at least one weight has been positioned. The sheet, film or tape is folded over onto itself, thereby enveloping the at least one weight and forming the weight holder. In the weight holder embodiments, the means for securing the weight holder to the blade may be by adhering tape.

0008 The method of the present invention comprises the steps of: (1) securing the device of the present invention to within the surface area of either face of a hockey blade via means for securing; and (2) practicing the game of hockey using a hockey stick having a blade to which the present device has been so secured. In one method embodiment, the means for securing the present device to within the surface area of either face of the blade is adhering tape. Either the at least one

weight or the at least one weight holder is positioned to fit within the surface area of one face of the hockey blade and the weight(s) or weight holder(s) is conformed to articulate with the contours of this face. The adhering tape is wrapped around the at least one weight or weight holder and the opposing face of the blade. Other embodiments of the method may employ various means for securing the at least one weight or at least one weight holder to the blade within the surface area of either face of the blade, such as string, glue, mortise and tenon joints, tongue and groove joints, Velcro, straps, clips, banding, two-sided tape, screws, nails and other securing means known in the art.

BRIEF DESCRIPTION OF THE DRAWINGS

0009 Figure 1 shows two perspective views of a typical hockey stick: Figure 1a is a perspective view of the back face of the stick; Figure 1b of the front face of the stick.

Figure 2 is a perspective view of the curvature of the blade of a typical hockey stick.

Figure 3 is a perspective view of one embodiment of the present device, having at least one weight.

Figure 4 shows perspective views of the embodiment having at least one weight with another means for securing.

Figure 5 shows perspective views of another embodiment of the present device having at least one weight holder.

Figure 6 shows perspective views of another weight holder embodiment having removable weights.

Figure 7 shows perspective views of another embodiment having multiple weights in which the multiple weights are joined by joining means.

Figure 8 shows perspective views of another weight holder embodiment whereby the weight holder device can be made on the fly for hockey practice as needed.

Figure 9 shows a perspective, cut-away view of a typical hockey stick blade in which the

present device has been embedded.

DETAILED DESCRIPTION

0010 The present invention comprises a device for adding weight to a hockey stick blade and a method for using the device. The present invention may be used in all forms of the game of hockey, i.e., ice hockey, field hockey, roller hockey, in-line hockey, street hockey, etc. Using a weight in the playing of hockey offers the general opportunity to improve strength, stamina and endurance and the specific opportunity to improve handling of a puck or ball with the blade.

0011 Figures 1 and 2 show views of a typical hockey stick. Figures 1 a and b show the back face view and the front face view, respectively, of hockey stick 10 to which the present invention has not yet been secured. Stick 10 comprises shaft 12 and blade 14. Blade 14 has two opposing surfaces, or faces, 16 and 18, each face being edged by perimeter 20. Merely for the purpose of establishing a convention herein, the front face of the blade, exemplified as face 18, is that blade face which has a concave curvature; the back face of the blade is exemplified here as face 16. It is well understood in the art that, based on the handedness of the player, the front and back faces of the blade may reverse. When secured to the hockey stick blade, the present device for adding weight to a hockey blade always fits within the surface area of a blade face and does not extend beyond the blade face. The securing means secures the present device to the blade so that the device always lies more or less in contact with the back surface of the blade. Thus, the present device always allows the player to drive the puck or ball with an unencumbered front face and adds weight to the hockey blade on the back face. Figure 2 shows contour 22 of blade 14. The contour of a blade refers to the curvature—concave or convex—in blade face 16 and 18 over any portion of blade 14.

0012 Figure 3 shows one embodiment of the present invention 30 which comprises at least one weight 32 of a size and configuration to fit within the surface area of face 34 (either face) of blade 36 having perimeter 38 and which is secured to blade 36 by securing means 39, which is exemplified

here as adhering tape. An alternative embodiment shown in Figure 4 at 40 comprises weight 42 with securing means 49, exemplified here as a snap and strap.

0013 Referring to Figures 3 and 4, the present device 30, 40 comprises at least one weight 32, 42 of a size and configuration that fits within the surface area of face 34, 44 of blade 36, 46 and which is secured to blade 36, 46 by securing means 39, 49. The weight 32, 42 is secured to the back face of blade 36, 46. The back face may be either of the two faces 34, 44 of blade 36, 46, the back face being determined by the player's handedness and the curvature of blade 36, 46. The surface area of weight 32, 42 does not extend beyond perimeter 38, 48 nor is suspended nor hangs from perimeter 38, 48. Thus, the surface area of the at least one weight is constrained by the blade perimeter. The weight may take any three-dimensional shape so long as the shape does not extend the weight's surface area beyond the blade perimeter.

0014 The at least one weight 32,42 may comprise a metal portion or be entirely of metal. Alternatively, the weight(s) of the present invention may be made of wood, vinyl, plastic, sand, rubber, etc. or comprise portions made of these materials. Indeed any solid substance or combination of solid substances known in the art to produce weights may be employed.

0015 Moreover, liquid and gaseous substances may be used to produce weights employed in the present device. For example, the weight(s) of the present invention may comprise at least one wrapper, receptacle, jacket, lining, liner or backing of any conformable material known in the art, such as rubber, plastic, vinyl, cloth, netting, foam, sponge, or the like into which are enclosed liquid and/or gaseous substances, such as gel, compressed air, etc. In some embodiments, the weight of the present device may comprise a metal portion, which may or not be conformable and a portion made of a conformable liquid and/or gas. In other embodiments, the weight consists only of a conformable metal portion. In still other embodiments, a metal portion, conformable or not, may be enclosed in liquid and/or gas, which in turn is enclosed in a conformable wrapper, receptacle,

jacket, lining, or the like. A weight made of conformable materials and having conformable portions may be conformed to the contour of the blade face to which it is secured. Such a weight promotes a more flexible fit with the blade face, especially when the means for securing the device to the blade is by adhering tape.

0016 The present invention contemplates that an embodiment of multiple weights (not shown) may include individual weights of varying substances. In Figure 3, weight 32 may comprise, instead of the single weight as shown, a multiple weight composed of, for example, a metal weight, wood weight, a weight comprising a vinyl enclosure of a liquid gel, and a plastic weight. In this way, a weight of the present device may provide varying heaviness at different locations of the blade face, which promotes tailored practice and the development of a specific and targeted muscle memory. When a multiple weight is employed, like the single weight, it may take any three-dimensional shape so long as its shape does not extend the multiple weight's surface area beyond the blade perimeter.

0017 The weight(s) may be coated. This is especially useful when the weight(s) comprises a metal portion and when the weight(s) is secured to the blade by a securing means that exposes the weight to contact with the puck or ball. The coating may be of any material known in the art that would foster the weight to withstand extreme temperature changes, exposure to moisture as well as contact with a puck at high speeds, as occurs during the playing of hockey. Coatings may include but are not limited to oven-baked enamel, a galvanized coating, a plastic and/or vinyl coating, a powder coating, etc, and may be applied, for example, by spraying or dipping, and cured by applying heat.

0018 In addition, weight coatings may be applied that bear indicia and information identifiable by the general public, such as logos of hockey teams, advertisements, trademarks, and the like. An information-bearing coating may be particularly useful when the weight is secured to the back side of the blade by securing means that do not obscure the information.

0019 Means for securing weights to the blade face include adhering means, magnetic means, tying means, binding means and the like. Such means include all manner of adhering tape, such as plastic, vinyl, cloth, etc.; Velcro; glue, epoxy and other adhesive compounds; magnets; string; two-sided tape, netting; plastic banding; steel banding; snaps; straps; mortise and tenon joints, tongue and groove joints between the weight and the blade; nails, screws, nuts and bolts and all other joining hardware known in the art; and combinations of these means as well as the means of applying heat to secure the weight to the blade face.

0020 A particularly useful securing means is hockey tape. Hockey players typically tape their blade before using it in order to increase the interplay between puck or ball and blade. The use of hockey tape as a securing means for the present device profits the hockey player in several ways: it ensures convenience and ease of use of the weight in hockey practice inasmuch as no other, special securing means is required. Moreover, securing the device to a hockey blade via adhering tape, or other non-permanent means, will not irreversibly alter a hockey stick but allows convertible uses, both to practice with weights and to play without weights using the same stick.

0021 As discussed above, other securing means besides adhering tape, such as hockey tape, may be used to secure the present device to the hockey blade. Like hockey tape, many of these permit removal of the device from the blade so as to foster practice and play uses of the hockey stick. Other non-permanent means for securing the device to the blade include but are not limited to magnets; string; Velcro; netting; two-sided tape; plastic, cloth, vinyl, rubber or metal banding; snaps; evaporating glue and/or adhesives, etc. The present invention also contemplates permanent means for securing the present device to the hockey blade so that the hockey stick becomes used primarily as a practice stick. More or less permanent means for securing the device to the blade include but are not limited to glue, epoxy and other adhesive compounds, nails, screws, nuts, bolts and other securing hardware.

0022 The embodiments of Figures 3 and 4 impart great adaptability both in the construction of the device and in its use. Because the individual weights of a multiple weight may be unjoined or dissociated from each other, one or more individual weights of a multiple weight may be secured by a removable means for securing whereas other of the individual weights may be secured by a more or less permanent means for securing. In such an embodiment, each individual weight may be secured to the blade by its own individual means for securing, which may differ from the means for securing of any of the other individual weights. For example, one individual weight may be secured by adhering tape, while a second may be secured by snap, while another may be secured by hardware, while a fourth may be secured by Velcro. The ability to remove individual weights of a multiple weight allows the player to vary the muscles trained and to increase over time the effort required of them. For example, a player may begin practice with one weight positioned at any one of a variety of locations on the face of the blade. By adding individual weights to different locations, say for example, to the ends of the blade or to its mid-section, the player can develop both varied muscle memory and increasing strength.

0023 Figure 5 shows a different embodiment 50 of the present invention for adding heaviness to a hockey blade. This embodiment comprises at least one weight 52 and means for securing 59 as well as weight holder 51 for receiving the at least one weight 52. In this embodiment, it is weight holder 51 which is secured to either face 54 of blade 56 by means for securing 59 so that the weight holder fits within the face of the blade to which it is secured.

0024 Weight holder 50 may comprise a single or multiple weight which may possess any or all variations of the weights described above, including the variations of composition, conformability, coatings, means for joining, length, width, overall configuration, etc. Thus, for example, the at least one weight 52 in Figure 5 received by weight holder 51 may comprise a metal portion and/or a conformable portion and/or be comprised of wood, plastic, rubber, vinyl, any useful, solid substance having weight. Weight 52 may comprise a conformable portion that encases the metal or other-

solid-substance portion. Weight 52 may be coated as described above. Weight 52 may be a multiple weight as exemplified in Figure 5 as 52 a-g. Individual weights 52a-g may be joined together by means for joining as described below.

0025 As shown in Figure 5, weight holder 51 may comprise casing 53 for receiving the at least one weight 52. The casing may comprise materials such as metal or wood or other materials whose function is to add to the heaviness of the overall device. The casing may be of a light weight material, such as adhering tape, vinyl, rubber, plastic, glue, epoxy, resin, etc. as well as a combination of heavier- and lighter-weight materials. The exact material of the casing varies depending on the means for securing the weight holder to the blade and the overall heaviness of the weights used. Heavier weights may demand a casing material adapted to withstand greater wear-and-tear on the weight holder caused by strong impact with a puck or ball.

0026 Particularly useful casing material include polyester films such as Mylar®, polyethylene films, Latex® and the like. Mylar® (or other polyester films or polyethylene films) have special advantages as casing material. This is because, when weights are positioned onto a Mylar® sheet, the sheet may be folded over the weights to create a casing that neatly and precisely envelopes the weights without excess material. Since Mylar® is a flexible material, the precisely formed casing made of Mylar® can conform to the convex curvature of the back face of the hockey stick blade by pressing the casing to the blade face while applying the means for securing. Other advantages of Mylar® besides its conformability are its light weight, durability, moisture resistance and availability in different thicknesses.

0027 As shown in Figure 5, weight 52 is generally not removable from casing 53. Alternatively, Figure 6 shows that casing 63 of weight holder 61 may hold removable weight 62, which may be a multiple weight and comprise weights 62a-d.

0028 As exemplified in Figures 5 and 6, multiple weights 52a-g, 62a-d may possess any length,

width, three-dimensional shape or configuration so long as both weight holder 51,61 as well as the received weight(s) lie within perimeter 58,68 of blade face 54, 64 to which weight holder 51, 61 is secured by means 59, 69. In addition, casing 53, 63 may comprise a conformable portion. For example, casing 53, 63 may comprise at least one wrapper, receptacle, jacket, lining, liner or backing made of conformable material, such as rubber, plastic, vinyl, cloth, netting or the like, adapted to receive a liquid and/or gas, such as gel or compressed air. In this way, casing 53, 63 may be adapted to conform to the contour of blade 56, 66 to which weight holder 51,61 is secured.

0029 To be clear, the present invention contemplates that both the weight holder may comprise a conformable portion as well as hold at least one weight which also comprises a conformable portion. In this way, the weight holder and weight of the present invention may function together to both conform to the contours of the blade to which the weight holder is secured.

0030 Figure 7 shows another embodiment of the present invention 70 in which individual weights 70a-c may be joined together by means for joining 75 so as to comprise a multiple weight that acts as an integral unit when secured to face 74 of blade 76. As shown, means for joining 75 may include hinged joints that interlock individual weights 72 a-c with each other. Other means for joining include wire; string composed of cloth, nylon, plastic; glue, epoxy and other adhesive compounds known in the art, netting; nails, screws, nuts and bolts, Velcro, male-female interlocking hardware that slide/lock into place as well as all other joining hardware known in the art.

0031 Multiple weight 72 in Figure 7a functions more or less as a unitary weight. Each individual weight 72 a-c of weight 72 will likely be secured to 76 blade by the same means for securing 79. Nonetheless, individual weights 72 a-c may still be removed depending on joining means 75 and on securing means 79. For example, when joining means 75 are hinges and the means for securing 79 is adhering tape, the player can remove hinge pins 77, take away individual weight 72b and join 72a to 72c by inserting hinge pin 77 into hinge 75. The result is shown in Fig. 7b, in which multiple weight 72 comprises 72 a and c. The use of joining means that allow the removal or addition of

individual weights coupled with the use of nonpermanent securing means, such as adhering tape, gives the present invention great adaptability in construction and use.

0032 The present invention may comprise multiple weight holders each comprising at least one weight, which are secured to the blade by means for securing. In this embodiment, the multiple weight holder may be secured to the blade individually by separate and distinct means for securing. For example, one of a plurality of weight holders may be secured by hardware to the blade while another is secured by adhering tape. In such a circumstance, all of the weight holders are secured to the back face of the blade and all lie within the perimeter of the face to which they are secured. The use of multiple weight holders provides great flexibility to add heaviness to the hockey stick. For example, a player may more or less permanently secure a weight holder with removable weights at a desired location on the blade face. By securing more weight holders to different locations on the blade face and by adjusting the number of removable weights, a hockey player can tailor the blade heaviness to improve muscle memory in a very precise manner.

0033 Another embodiment of the present invention allows a hockey player to create a present device 80 on the fly. As Figure 8 shows, weight holder 81 may be created by using sheet 83, which may comprise a Mylar® sheet as shown, or adhering tape, particularly hockey tape (not shown). For explanatory purposes, length 83 is divided into sections 85 and 87. A player may position at least one weight 82, which may be a multiple weight, onto section 85. The weights may be of different sizes and shapes as shown. By folding section 87 over section 85 so that the weights are encased within sheet 83, a player creates casing 83 that serves as weight holder 81, which may be secured to blade 86, as shown in Figure 8. Alternatively, hockey tape may function as the casing as well as the securing means. Use of Mylar® sheets (or adhering tape) as the casing and use of adhering tape as securing means 89 allows a player to make a weight holder of the present invention at the time of practice, as needed. By using individual weights 82 that may be removably joined, a player may remove or add weights at will to make and use weight holder 81 tailored for each practice session. A player may also modify weight holder 81 within a practice session as needed.

The on-the-fly embodiment can be made available to hockey players as a practice kit, which may contain hockey tape, other adhering tape or film such as Mylar®, and a collection of weights of varying size, shape, and heaviness.

0034 The present invention also comprises a method of using the present device to add weight to a hockey blade. The present method comprises securing the present device to a blade face via removable or non-removable means for securing, as discussed above, and practicing the game of hockey using a hockey stick to which the device has been secured. The present device includes either at least one weight or at least one weight holder that fits within the face of a hockey blade.

0035 Moreover, as shown in Figure 9, the present invention also contemplates a hockey stick blade that has been adapted to incorporate at least one weight. That is, the present invention includes hockey stick blade 96 that possesses at least one weight 92 as an integral element. Generally, blade 96 may be manufactured such that at least one weight 92 is received inside the blade and which does not extend beyond blade perimeter 98. Figure 9 shows blade face 94a cut away to reveal weight 92 lying within blade 96.

0036 In practicing the present method, a player must position the weight or weight holder to fit within the face of the blade to which it will be secured. If the weight or weight holder comprises a conformable portion, the player may conform the weight or weight holder to match the contour of the blade face. As described above, the player may use Mylar® sheets (or any other polyester or polyethylene material) as well as adhering tape, particularly hockey tape, to create a weight holder. When the player uses a removable means for securing the weight or weight holder to the blade face, such as snaps, netting, string, adhering tape, Velcro, or the like, the player can create a present device on the fly. Especially fit for creating a present device on the fly is the use of adhering tape, such as hockey tape, as the securing means.

0037 It will be apparent to those skilled in the art that many modifications and substitutions can

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be made to the foregoing embodiments without departing from the scope of the present invention,
which is defined by the appended claims.